ED. 1 - 09/2023

Manuale Cod. 150208

SAMOA

LEADING THROUGH INNOVATION

EN

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SIRIO 33:1 EXT

Pneumatic Extrusion Pump

OPERATING AND MAINTENANCE MANUAL

This manual is to be considered as an English language translation of the original manual in Italian. The manufacturer shall bear no responsibility for any damages or inconveniences that may arise due to the incorrect translation of the instructions contained within the original manual in Italian.

Due to a constant product improvement programme, the factory reserves the right to modify technical details mentioned in this manual without prior notice.

SIRIO 33:1

Pump EXT

INDEX

WE ADVISE THE USE OF THIS EQUIPMENT ONLY BY PROFESSIONAL OPERATORS.
ONLY USE THIS MACHINE FOR USAGE SPECIFICALLY MENTIONED IN THIS MANUAL.

Thank you for choosing a **SAMOA** product.
As well as the product purchased, you will receive a range of support services enabling you to achieve the results desired, quickly and professionally.

A WARNINGS

The table below provides the meaning of the symbols used in this manual in relation to using, earthing, operating, maintaining, and repairing of this equipment.

- Read this operator's manual carefully before using the equipment.
- An improper use of this machine can cause injuries to people or things.
- Do not use this machine when under the influence of drugs or alcohol.
- Do not modify the equipment under any circumstances.
- Use products and solvents that are compatible with the various parts of the equipment, and read the manufacturer's warnings carefully.
- See the Technical Details for the equipment given in the Manual.
- Check the equipment for worn parts once a day. If any worn parts are found, replace them using ONLY original spare parts.
- Keep children and animals away from work area.
- Comply with all safety standards.

- It indicates an accident risk or serious damage to equipment if this warning is not followed.

FIRE AND EXPLOSION HAZARD

- Solvent and paint fumes in work area can ignite or explode.
- **To help prevent fire and explosion:**
  - Use equipment ONLY in well ventilated area.
  - Eliminate all ignition sources, such as pilot lights, cigarettes and plastic drop cloths (potential static arc).
  - Ground equipment and conductive objects.
  - Use only grounded hoses.
  - Do not use trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminium equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.
  - Do not form connections or switch light switches on or off if the air contains inflammable fumes.
- If electrical shocks or discharges are encountered the operation being carried out using the equipment **must be stopped immediately.**
- Keep a fire extinguisher at hand in the immediate vicinity of the work area.

- It indicates wound and finger squashing risk due to movable parts in the equipment.
- Tenersi lontano dalle parti in movimento.
- Do not use the equipment without the proper protection.
- Before any inspection or maintenance of the equipment, carry out the decompression procedure explained in this manual, and prevent any risk of the equipment starting unexpectedly.

- Report any risk of chemical reaction or explosion if this warning has not been given.
- (IF PROVIDED) There is a risk of injury or serious lesion related to contact with the jet from the spray gun. If this should occur, IMMEDIATELY contact a doctor, indicating the type of product injected.
- (IF PROVIDED) Do not spray before the guard has been placed over the nozzle and the trigger on the spray gun.
- (IF PROVIDED) Do not put your fingers in the spray gun nozzle.
- Once work has been completed, before carrying out any maintenance, complete the decompression procedure.

- It indicates important recommendations about disposal and recycling process of products in accordance with the environmental regulations.

- Mark any clamps attached to earth cables.
- Use ONLY 3-wire extension cords and grounded electrical outlets.
- Before starting work make sure that the electrical system is grounded and that it complies with safety standards.
- High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin.
- **To help prevent injection, always:**
  - (IF PROVIDED) Engage trigger lock when not spraying.
  - (IF PROVIDED) Do not put your hand over the spray tip. Do not stop or deflect leaks with your hand, body or other.
  - (IF PROVIDED) Do not point gun at anyone or at any part of the body.
  - (IF PROVIDED) Never spray without tip guard.
  - Do pressure relief if you stop spraying or being servicing sprayer and before any maintenance operations.
  - Do not use components rated less than sprayer Maximum Working Pressure.
  - Never allow children to use this unit
  - (IF PROVIDED) Brace yourself; gun may recoil when triggered.

If high pressure fluid pierces your skin, the injury might look like "just a cut", but it is a serious wound!
Get immediate medical attention.

- It is obligatory to wear suitable clothing as gloves, goggles and face shield.
- Wear clothing that complies with the safety standards in force in the country in which the equipment is used.
- Do not wear bracelets, earrings, rings, chains, or anything else that may hinder the operator's work.
- Do not wear clothing with wide sleeves, scarves, ties, or any other piece of clothing that could get tangled up in moving parts of the equipment during the work, inspection, or maintenance cycles.

B TRANSPORT AND UNPACKING

- Observe the orientation of the packaging indicated externally by inscriptions or symbols
- Before installing the equipment to prepare a suitable environment with the space that you need the proper lighting clean, smooth flooring
- All unloading and handling of the equipment are covered by the user must be very careful to avoid injury or damage to the equipment.

  To perform the unloading operation, use only qualified and trained personnel (truck and crane operators, etc.) and also suitable hoisting equipment for the weight of the installation or its parts.

  Follow carefully all the safety rules.

  The personnel must be equipped with the necessary individual protection.
- The manufacturer declines any responsibility concerning the unloading and transport of the equipment at the workplace
- Verify the integrity of the package upon receipt, remove the unit from the packaging and check that it has not been damaged during transport

  If any part is broken, contact the **MANUFACTURER** and shipping agency. The deadline for submissions is corruption of 8 days from the date of receipt of the equipment. The communication must be made by registered letter with return receipt up to the **MANUFACTURER** and transport operator within.

The customer is in charge of the disposal of packaging materials which must be performed in accordance with the regulations in force in the country where the plant is installed and used. It is nevertheless sound practice to recycle packaging materials in an environment-friendly manner as much as possible.

C SAFETY REGULATIONS

Read carefully the following before using the product.
Keep these instructions.

Unauthorized tampering or replacement of one or more parts composing the equipment, accessories, tools, materials other than those recommended by the manufacturer, may pose risk of injury and raise the manufacturer from civil and criminal liability.

- THE EMPLOYER SHALL TRAIN ITS EMPLOYEES ABOUT ALL THOSE RISKS STEMMING FROM ACCIDENTS, ABOUT THE USE OF SAFETY DEVICES FOR THEIR OWN SAFETY AND ABOUT THE GENERAL RULES FOR ACCIDENT PREVENTION IN COMPLIANCE WITH INTERNATIONAL REGULATIONS AND WITH THE LAWS OF THE COUNTRY WHERE THE PLANT IS USED.
- THE BEHAVIOUR OF THE EMPLOYEES SHALL STRICTLY COMPLY WITH THE ACCIDENT PREVENTION AND ALSO ENVIRONMENTAL REGULATIONS IN FORCE IN THE COUNTRY WHERE THE PLANT IS INSTALLED AND USED.
- KEEP YOUR WORK PLACE CLEAN AND TIDY. DISORDER WHERE YOU ARE WORKING CREATES A POTENTIAL RISK OF ACCIDENTS.
- ALWAYS KEEP PROPER BALANCE AVOIDING UNUSUAL STANCE.
- BEFORE USING THE TOOL, ENSURE THERE ARE NOT DAMAGED PARTS AND THE MACHINE CAN WORK PROPERLY.
- ALWAYS FOLLOW THE INSTRUCTIONS ABOUT SAFETY AND THE REGULATIONS IN FORCE.
- KEEP THOSE WHO ARE NOT RESPONSIBLE FOR THE EQUIPMENT OUT OF THE WORK AREA.
- NEVER EXCEED THE MAXIMUM WORKING PRESSURE INDICATED.
- NEVER POINT THE SPRAY GUN AT YOURSELVES OR AT OTHER PEOPLE. THE CONTACT WITH THE CASTING CAN CAUSE SERIOUS INJURIES.
- IN CASE OF INJURIES CAUSED BY THE GUN CASTING, SEEK IMMEDIATE MEDICAL ADVICE SPECIFYING THE TYPE OF THE PRODUCT INJECTED. NEVER UNDERVALUE A WOUND CAUSED BY THE INJECTION OF A FLUID.
- ALWAYS DISCONNECT THE SUPPLY AND RELEASE THE PRESSURE IN THE CIRCUIT BEFORE PERFORMING ANY CHECK OR PART REPLACEMENT OF THE EQUIPMENT.
- NEVER MODIFY ANY PART IN THE EQUIPMENT. CHECK REGULARLY THE COMPONENTS OF THE SYSTEM.

  REPLACE THE PARTS DAMAGED OR WORN.
- TIGHTEN AND CHECK ALL THE FITTINGS FOR CONNECTION BETWEEN PUMP, FLEXIBLE HOSE AND SPRAY GUN BEFORE USING THE EQUIPMENT.
- ALWAYS USE THE FLEXIBLE HOSE SUPPLIED WITH STANDARD KIT.
- THE USE OF ANY ACCESSORIES OR TOOLING OTHER THAN THOSE RECOMMENDED IN THIS MANUAL, MAY CAUSE DAMAGE OR INJURE THE OPERATOR.
- THE FLUID CONTAINED IN THE FLEXIBLE HOSE CAN BE VERY DANGEROUS. HANDLE THE FLEXIBLE HOSE CAREFULLY. DO NOT PULL THE FLEXIBLE HOSE TO MOVE THE EQUIPMENT. NEVER USE A DAMAGED OR A REPAIRED FLEXIBLE HOSE.

The high speed of travel of the product in the hose can create static electricity through discharges and sparks. It is suggested to earth the equipment. The pump is earthed through the earth cable of the supply.
The gun is earthed through the high pressure flexible hose.
All the conductors near the work area must be earthed.

Never spray over flammable products or solvents in closed places.

Never use the tooling in presence of potentially explosive gas.

Always check that the product is compatible with the materials composing the equipment (pump, spray gun, flexible hose and accessories) with which it can come into contact. Never use paints or solvents containing Halogen Hydrocarbons (as the Methylene Chloride). If these products come into contact with aluminium parts can provoke dangerous chemical reactions with risk of corrosion and explosion.

Avoid approaching too much to the pump piston rod when the pump is working or under pressure. A sudden movement of the piston rod can cause wounds or finger squashing.

If the product to be used is toxic, avoid inhalation and contact by using protection gloves, goggles and proper face shields.

Take proper safety measures for the protection of hearing in case of work near the plant.

D CONDITIONS OF GUARANTEE

The conditions of guarantee do not apply in the following situations:
- **improper washing and cleaning of components causing malfunction, wear or damage to the equipment or any of its parts;**
- **improper use of the equipment;**
- **use that does not conform with applicable national legislation;**
- **incorrect or faulty installation;**
- **modifications, interventions and maintenance that have not been authorised by the manufacturer;**
- **use of non-original spare parts or parts that do not correspond to the specific model;**
- **total or partial non-compliance with the instructions provided.**

E REFERENCE STANDARDS

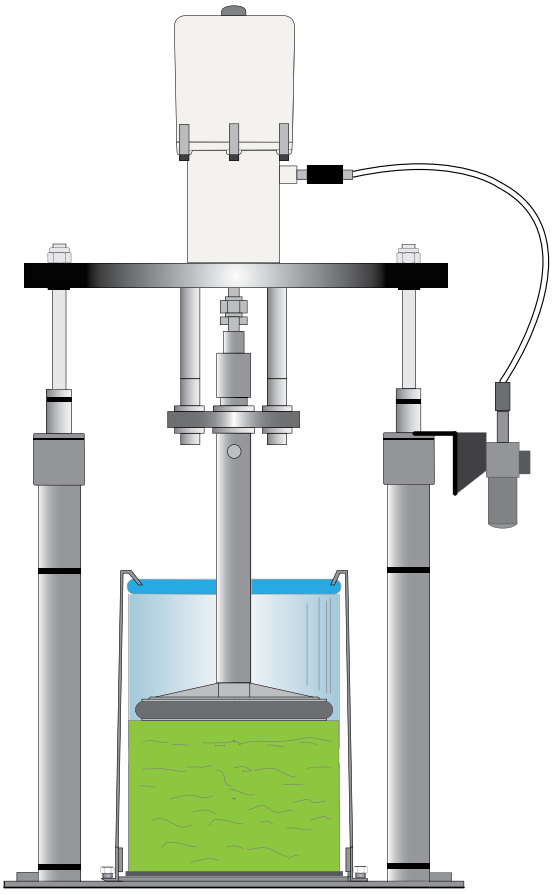
The reference documentation for the design and manufacture of the line/machine by the company is as follows:

- **Directive 2006/42/EC** on the approximation of the laws of the Member States relating to machines.
- **EN ISO 12100-1/-2** - Safety of machinery - General design principles - Risk assessment and risk reduction.

F TYPICAL INSTALLATION

The **SIRIO 33:1** pump can be installed on a pneumatic double post ram with shovel plate.

The double post ram allows to suck the product directly from the drum and also to replace quickly the drum itself. The shovel plate, fastened at the base of the pump, compresses the material ensuring a constant product flow. In addition, it protects the material not yet sucked against powder, moisture, and drying caused by contact with air.



Pos.	Description
1	Double post ram for 30 litres drums
2	Shovel plate in cast iron complete with double gasket

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G WORKING PRINCIPLE

The **SIRIO 33:1 EXT** pump is a pneumatic pump to be used for the extrusion and transfer of glues, lubricants, greases, silicones, adhesives, mastics, putties and medium-high viscosity materials which can contain large amounts of solids.

SIRIO 33:1 is essentially made up of an air motor and a structure called "*material pumping group*", or simply "*pumping group*".

In the pneumatic motor, compressed air causes the vertical reciprocating movement of the motor piston; this movement is transmitted through a connecting rod to the material pumping piston ending with a shovel plate allowing to suck very visous products.

The complete equipment includes the air filter.

The 33:1 ratio indicates that the outlet pressure of the material is 33 times the pump feed air pressure.

H TECHNICAL DATA

SIRIO	33:1
Pum pressure ratio	33:1
Air pressure range	3-7 bar / 40-100 psi
Maximum fluid outlet pressure	231 bar / 3,350 psi
Delivery per cycle	100 cc
Air consumption at 60 cycles / min	3 bar / 760 l/min 5 bar - 1,260 l/min 7 bar - 1,760 l/min
Air inlet thread	3/4" BSPP (F)
Fluid outlet thread	1" BSPP (f)

SIRIO	33:1
Lower pump material	INOX / STAINLESS STEEL 420B, Carbon Steel
Fluid plunger material	INOX / STAINLESS STEEL 420B
Seals material	PTFE + PE 100
Air motor piston diameter and stroke	ø 6 1/2" - 4" ø 162mm - 100mm

I DESCRIPTION OF THE EQUIPMENT

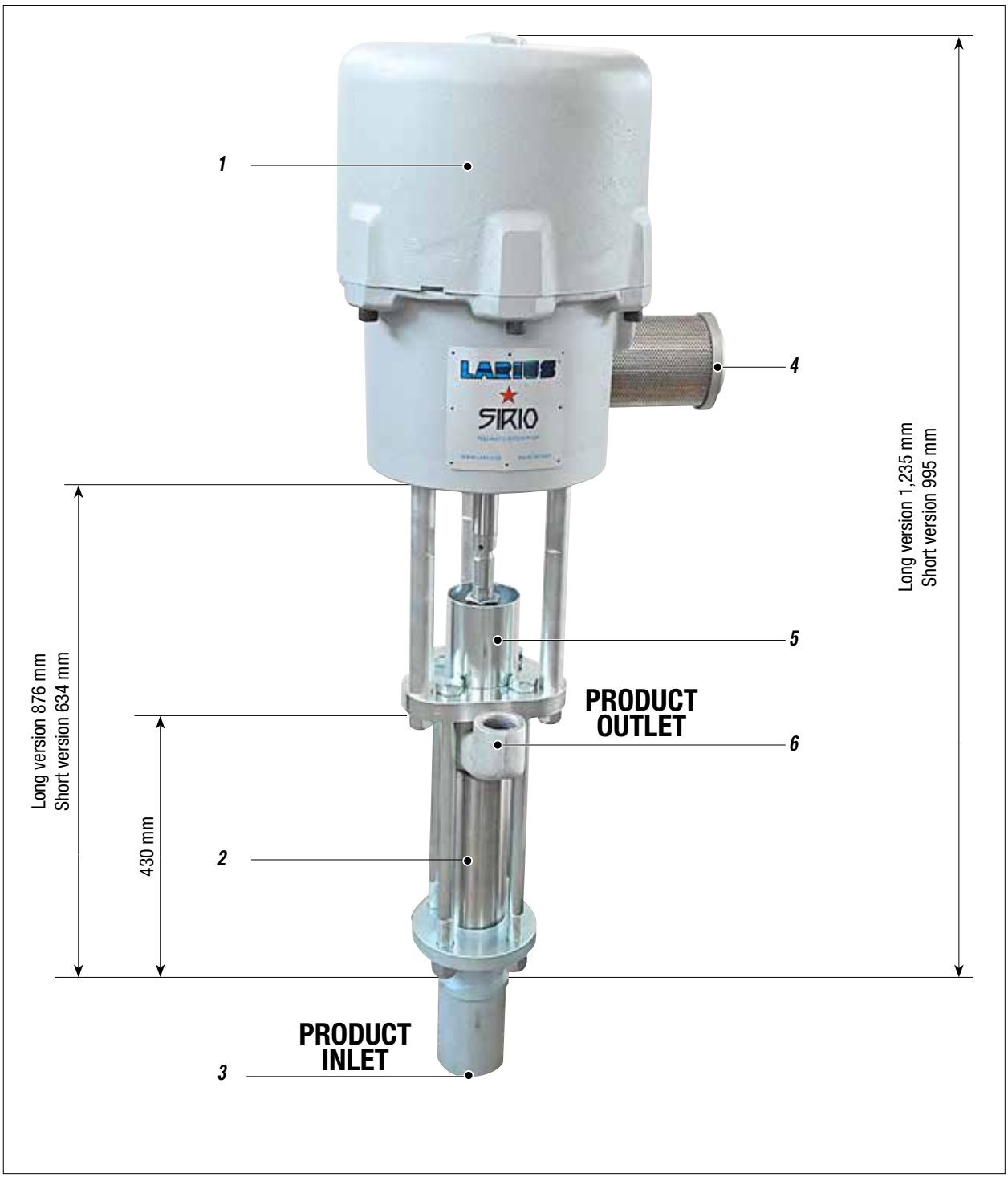

Fig. 1

Pos.	Description
1	Pneumatic pump motor
2	Material pumping group
3	Material intake

Pos.	Description
4	Filter
5	Oil cup
6	Material release

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J SETTING-UP

CONNECTION TO THE FEED AIR
For pump feed use a hose with an internal diameter no lower than 20 mm.

Install an air pressure regulator at the pump intake (it is recommended to equip it with condensate filter and lubricator). The outlet pressure of the material is 33 times the inlet pressure of the pump feed air. Therefore, it is extremely important to adjust the value of the feed air pressure.

CONNECTION OF THE MATERIAL RELEASE HOSE
Connect the high pressure hose at the outlet of the pump.
It is recommended to tighten the fittings.

K WORKING

- Use the machine only after the completion of all the setting-up operations described in the previous paragraph.

Check all the fittings for connection of the different components (pump, flexible hose, spray gun, etc.) before using the equipment.

- Use the supplied lubricant (ref. 16340) to facilitate the sliding of the piston inside the seal packing and to interpose the oil within the air.

Before each working day, make sure that the ring nut is filled with hydraulic oil (ref. 16340); the oil facilitates the sliding of the piston and prevents any material which may have leaked out of the seals from drying once the equipment has been shut off.

- Dip the material pumping hose into the product tank.
- Make the compressed air flow into the pump. It is advisable to adjust air pressure to minimum necessary for its continuous working.
- When the product chamber is full, the pump will start working and stopping. The pump will start working again any time the trigger of the spray gun is pressed or the delivery valve is open.
- In case of difficult suction of the pump, slowly open the bleeder valve and close it when some material comes out.
- The pump has been adjusted at our factory with light mineral oil and a part of it could be left inside the pumping element. Point the spray gun or the delivery valve at the tank and drain the product left inside the pump till the material to be used has come out.
- If long breaks are foreseen during the use of the equipment (for example the night break at the end of the working day) make sure that the product being used can be left inside the pump and the various pipes without the risk of it drying out. If this risk does not exist, then in the event of a work break it is sufficient to interrupt the air supply to the pump and release the pressure in the circuit by acting on the delivery valve or on the pump bleed valve.

Always avoid pump idling: this operation could damage the pneumatic motor and the seals.

L CLEANING AT THE END OF THE WORK

"*Cleaning at the end of the work*" refers to the cleaning to be carried out in case of use with a different product or if a long period of downtime is foreseen.

- Stop the air supply to the pump.
- Dip the material pumping hose into the washing solvent tank (check its chemical compatibility with the product being used).
- Make compressed air flow into the pump. It is advisable to adjust the air pressure to minimum necessary to its continuous working.
- Point the spray gun or the delivery valve at a container and drain all the product left inside the pump until a clean solvent comes out.
- At this point, stop the air supply to the pump and drain the residual pressure.
- In case of long downtime, it is recommendable to duly suck and leave light mineral oil inside the pumping unit.

Store possible dangerous fluids in proper containers. Their disposal must be performed in accordance with the regulations in force about the industrial waste goods.

M ROUTINE MAINTENANCE

Always close the compressed air supply and release the pressure in the plant before performing any check or maintenance of the pump.

PACKING NUT CHECK

- Check periodically (and every time the pump is operated after a long storage) that the packing nut is not loosened, causing otherwise the leaking of the product. To tighten the packing nut (**1**) use the wrench supplied (**2**).

NOTE

The packing nut (1) must be tightened so as to avoid wastes of product, but not excessively to avoid the seizure of the pumping piston and the wear of seals. In case of persistent coming out of product, replace the seals.

Before each working day, make sure that the ring (3) nut is filled with hydraulic oil (ref. 16340); the oil facilitates the sliding of the piston and prevents any material which may have leaked out of the seals from drying once the equipment has been shut off.

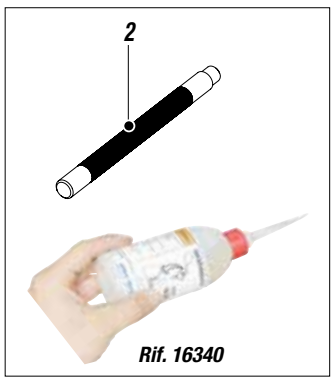

Fig. 1

Fig. 2

- Check periodically the air supply to the pump. Make sure the air is always clean and lubricated. In case of installation of a lubricator on the air supply to the pump, it is advisable to keep the cup full of a mixture of water and antifreeze liquid *(dilution ratio 4:1)*.

N DISASSEMBLY OF THE PUMPING GROUP

Always close the compressed air supply and release the pressure in the plant before carrying out the disassembly of the pumping group.

- Unscrew the coupling sleeve so as to detach the pumping group from the motor.
- Remove the nuts (**1**) and detach the pumping group.
- Remove the split pin (**2**) and remove the tie rod.
- Remove the cup (**3**) and unscrew the seal press nut (**4**).

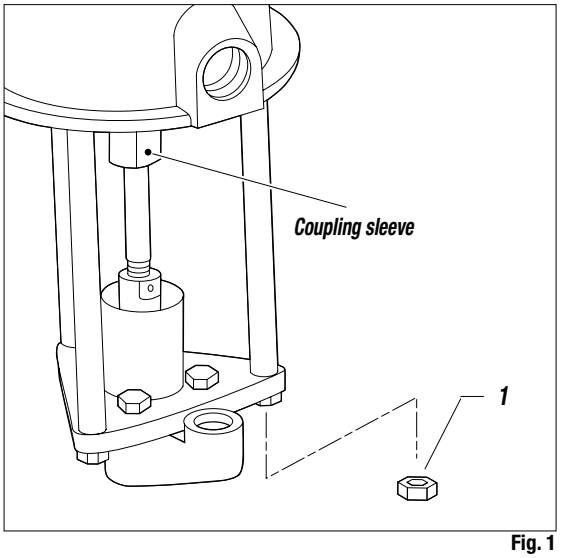

Fig. 1

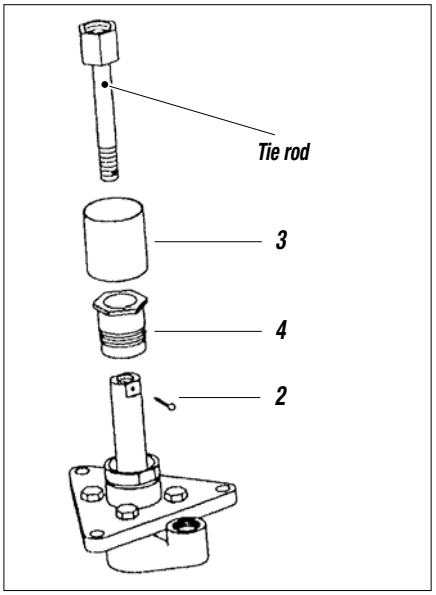

Fig. 2

- Push downwards the motor piston rod till the shovel plate comes out from the housing. Unscrew the nut (**5**), the plates (**6**) and (**7**) and the bush (**8**).

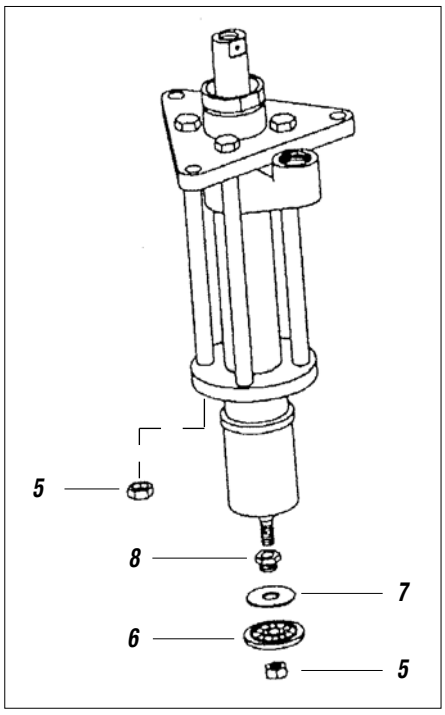

Fig. 3

- Remove the nuts (**5**) and disconnect the housing (**9**) [pay attention to the washer (**10**)].

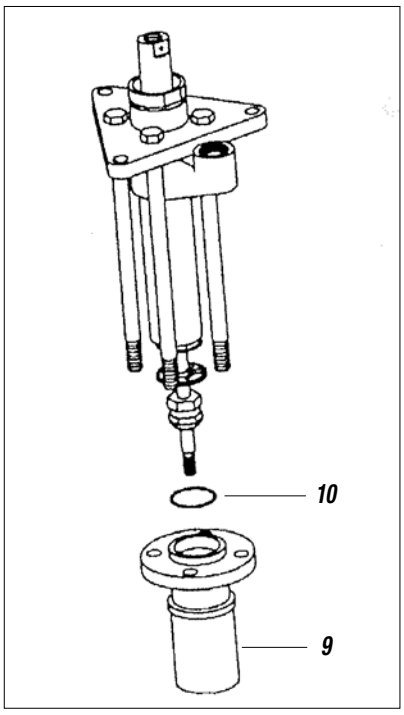

Fig. 4

- Extract the complete shutter group from the rod, the lock (**27**), the washer (**10**) and the cylinder (**12**).
- Disassemble the shutter group and replace the gaskets (refer to the exploded wiew).

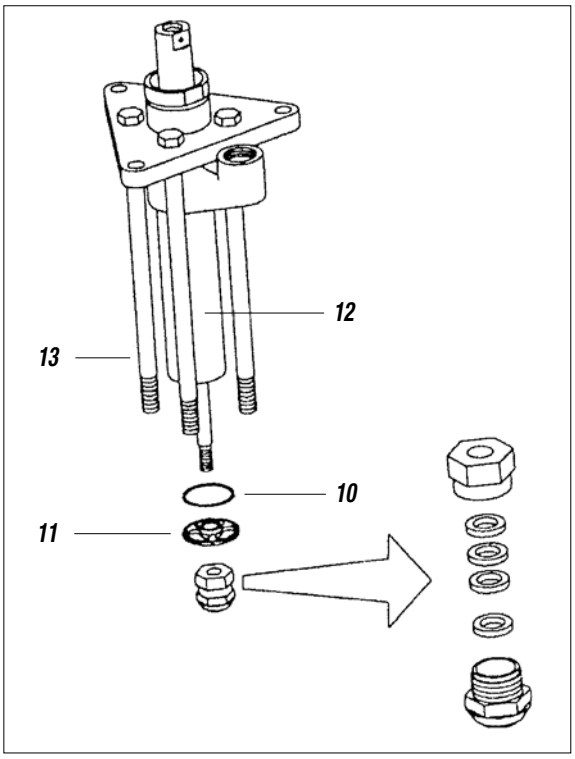

Fig. 5

- Extract the tie rods (**13**) from the top.
- Unscrew the fitting (**14**) and remove the ball (**15**), the ring (**16**), the gaskets (**17**), the ring (**18**) and the washer (**19**) (replace worn parts).

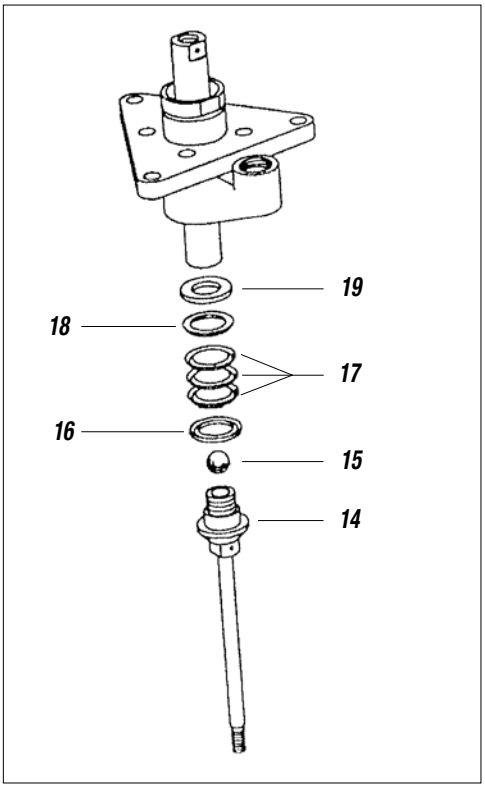

Fig. 6

- Take out the upper gasket pack: the ring (**20**), the gaskets (**21**) and the ring (**22**). Replace the worn parts.
- For the correct reassembling of the parts and of the complete pumping group, refer to the exploded view.

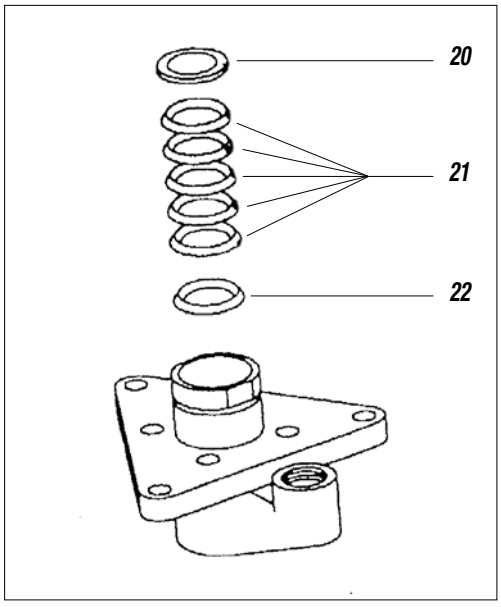

Fig. 7

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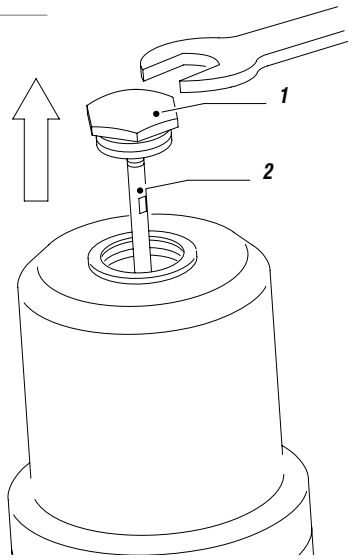
O MANUAL RESET OF THE PNEUMATIC MOTOR

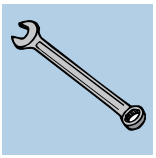
- The feed air pressure of the pump must never be higher than the maximum value indicated in the technical data. Exceed this value can block the valves of the pneumatic motor in the intermediate position of the cycle reversal.
- To start again a blocked motor, close the air supply and release pressure in the plant. This operation should allow the recovery of the valves.
- In case the motor is blocked, proceed as follows:
  - Close the air supply to the pump and release the residual pressure in the plant;
  - unscrew the motor cap (**1**) and pull it upward along with the guide rod (**2**) so as to manually trigger the stroke inversion unit;
  - screw again the plug.

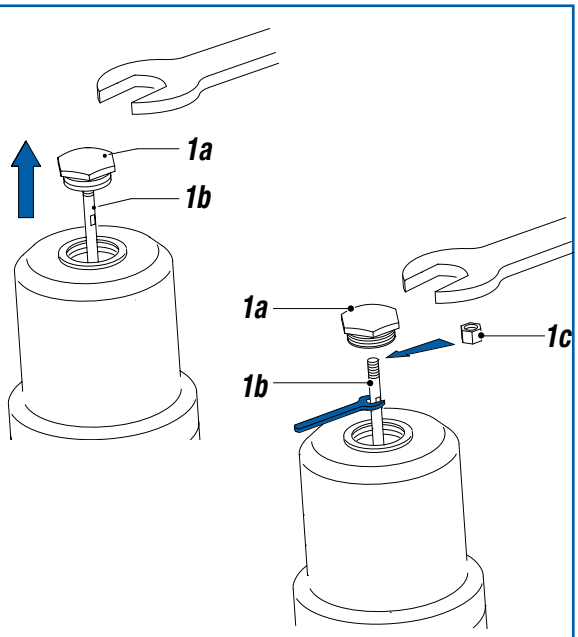


P DISMANTLING AND REASSEMBLING THE PNEUMATIC MOTOR

1

Necessary tools and equipment





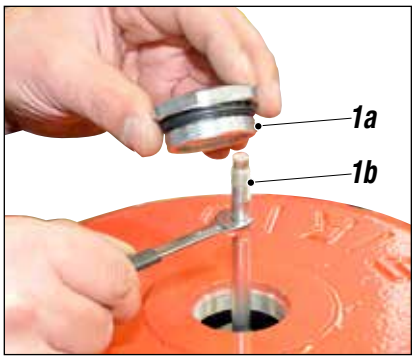
Procedure

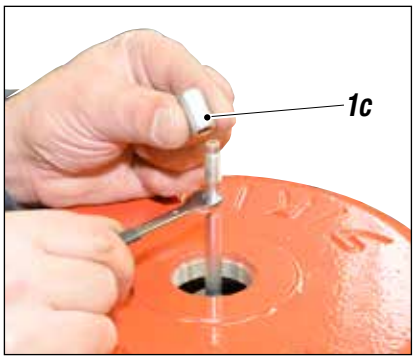
1.1 Close the compressed air supply to the pump and release the residual pressure in the plant.

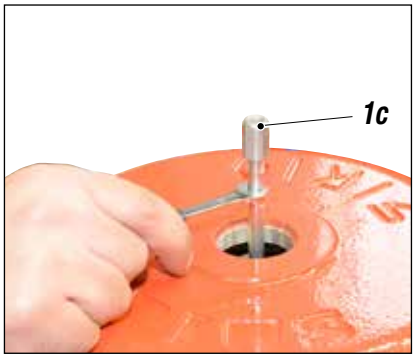
1.2 Unscrew the motor cap (**1a**) and pull it upwards together with the guide rod (**1b**) (**1e**)

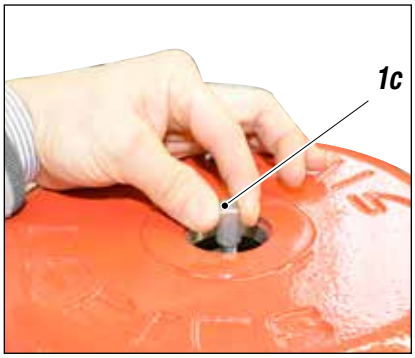
1.3 Hold the guide rod (**1b**) and remove the plug (**1a**) (using two wrenches).

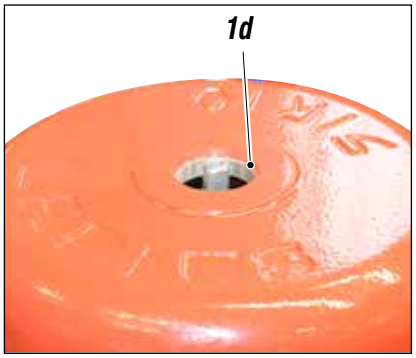
Replace immediately the plug with a usual M8 (1c) nut before the guide rod (1b) slides into the cylinder (1d).











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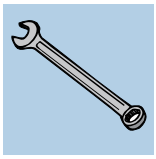
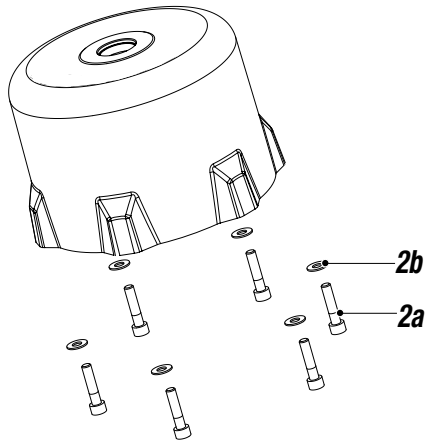
2

Necessary tools and equipment





Procedure

2.1 Remove the screws **(2a)** and the washers **(2b), (2c), (2d).**

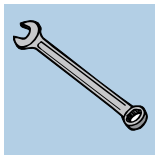
3

Procedure

3.1 Carefully extract the motor cylinder (**3a**) fom the pump.

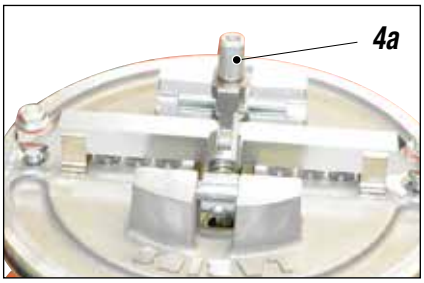
4

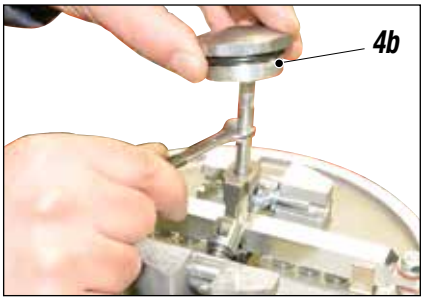
Necessary tools and equipment



Procedure

4.1 Unscrew the nut (**4a**), holding the guide rod with a 7mm wrench. Then reassemble the cap (**4b**).

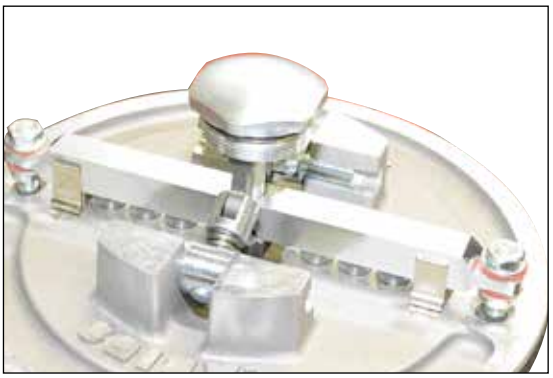


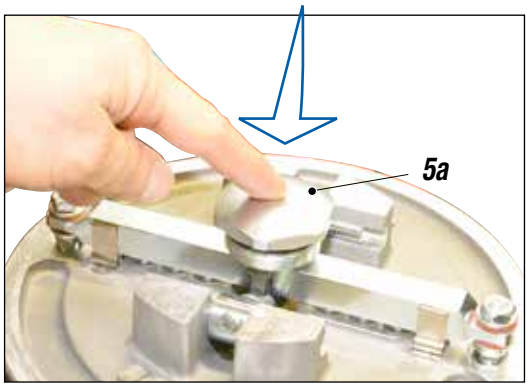


5

Procedure

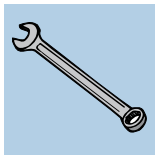
5.1 Press at the point (**5a**) to snap inside the rocker arm stud screw





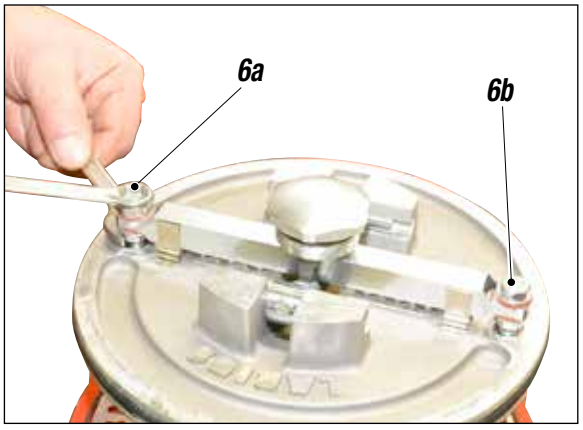
6

Necessary tools and equipment



Procedure

6.1 Unscrew and remove the two screws (**6a, 6b**) with 2 13mm wrenches as shown in figure (**6c**)



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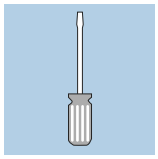
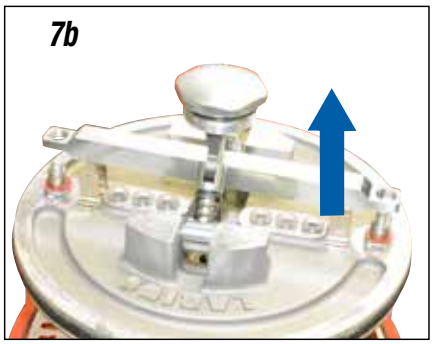
7

Necessary tools and equipment



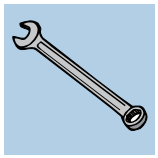
Procedure

7.1 Use a screwdriver to lever the lower part of the stud screw (**7a**), keeping a hand over the cap to accompany it. (**7b**)



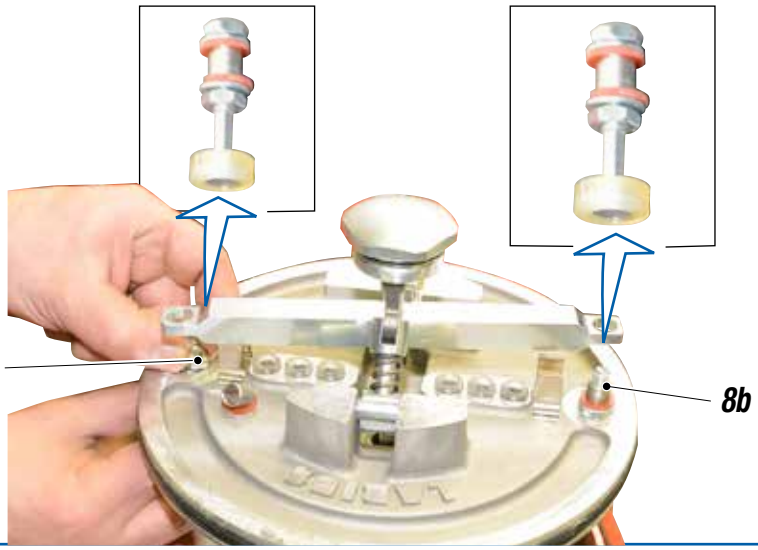
8

Necessary tools and equipment



Procedure

8.1 Remove the two valve screws (**8a, 8b**)

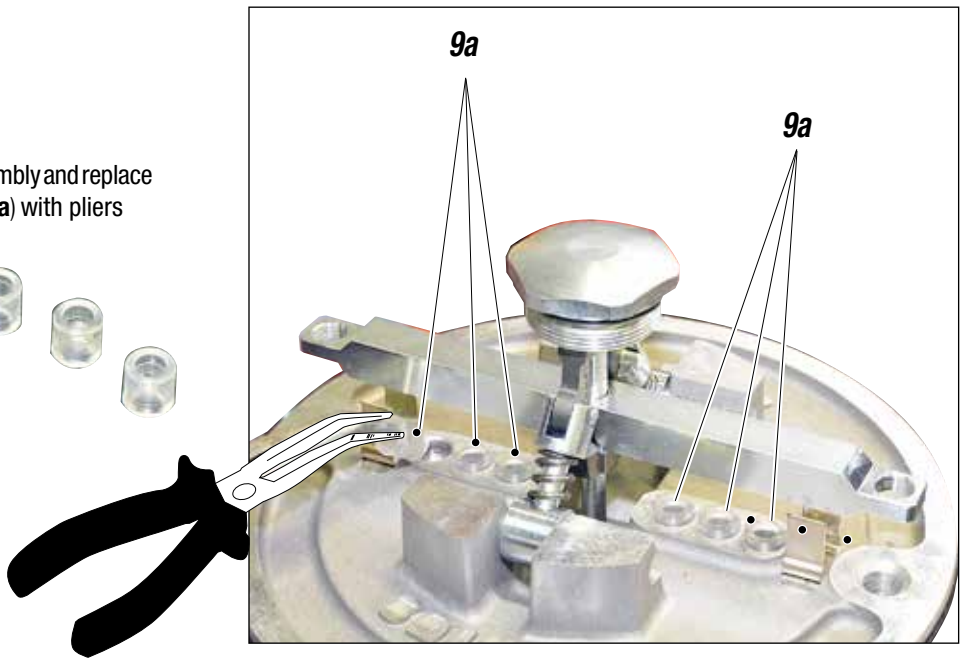


9

Necessary tools and equipment

Procedure

9.1 Proceed with disassembly and replace the 6 seal sleeves (**9a**) with pliers

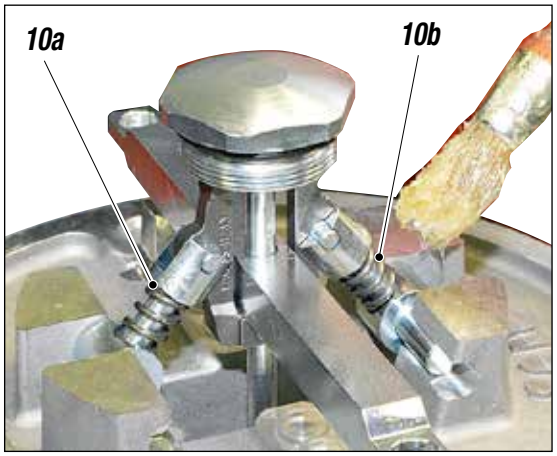


10

Necessary tools and equipment

Procedure

10.1 Lubricate the springs (**10a, 10b**).



11

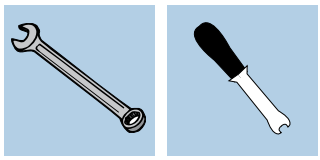
Necessary tools and equipment

Procedure

11.1 Remove the OR gasket (**11a**) and replace it if necessary with a spare part

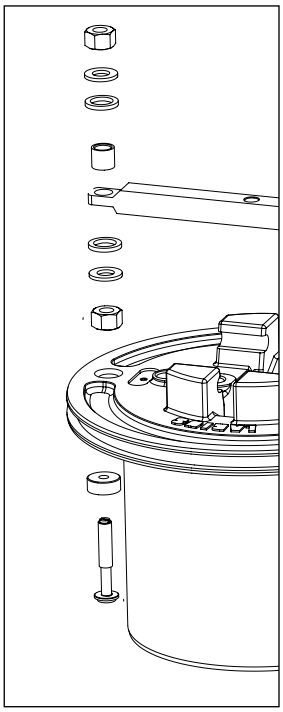
12

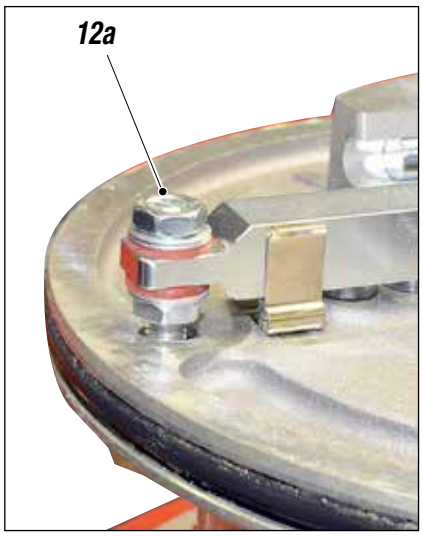
Necessary tools and equipment



Procedure

12.1 Reassemble the two valve screws (**12a**) as shown in the drawing





NOTE

Follow the direction of rotation of gaskets

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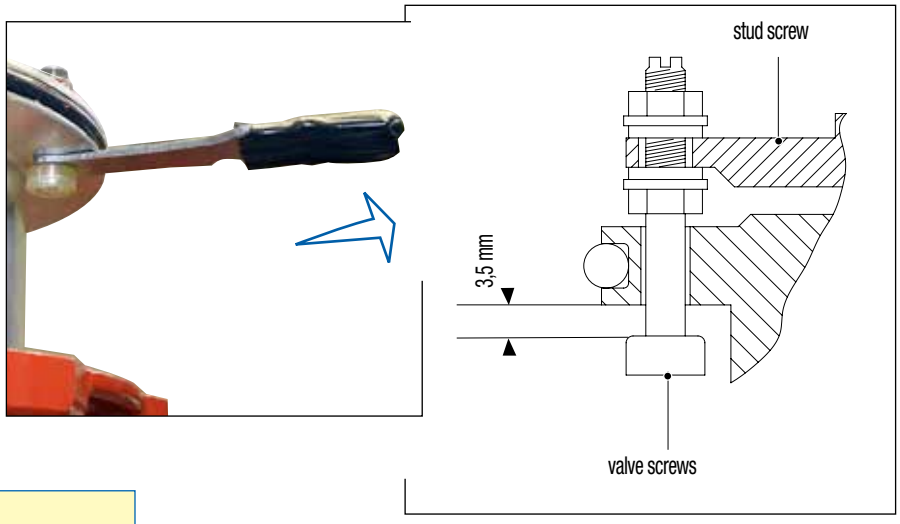
Procedure

12.2 Reassemble the two valve screws, inserting a 3.5 mm thickness gauge as shown in the drawing and adjusting the exact position of the stud screw as shown in the drawing, keeping a tolerance distance of 3.5 mm

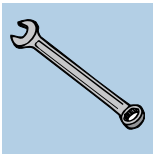


NOTE

Make adjustments in the same way on both valve screws

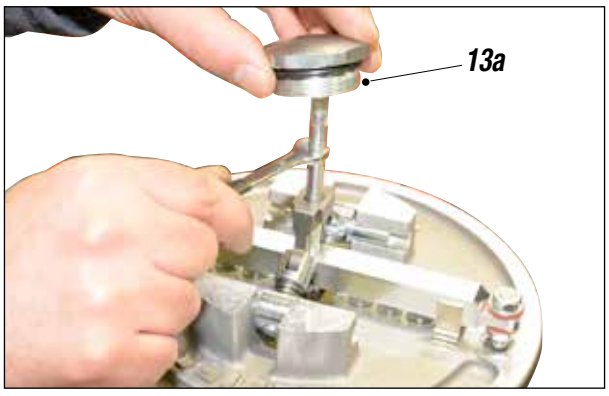
13

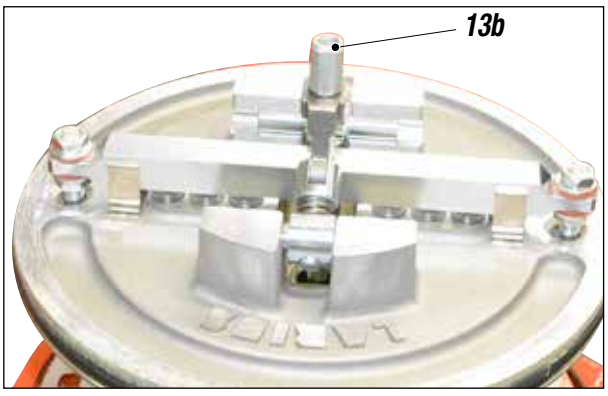
Necessary tools and equipment



Procedure

13.1 Unscrew the cap (**13a**), holding the guide rod with a 7mm wrench. Then reassemble the nut (**13b**).



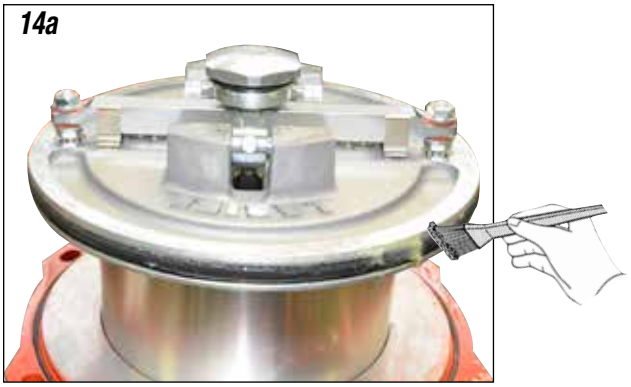


14 Necessary tools and equipment

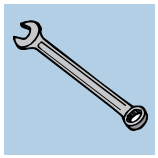
Procedure

14.1 Lubricate the gasket (**14a**)

14.2 Carefully reassemble the motor cylinder (**14b**) on the pump.

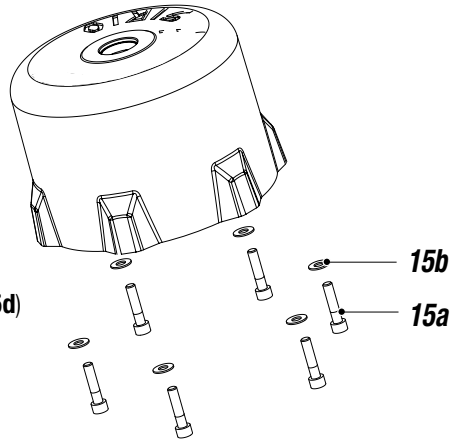


15 Necessary tools and equipment



Procedure

15.1 Screw back in the 6 screws (**15a**) and the washers (**15b**). (**15c**)(**15d**)



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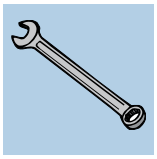
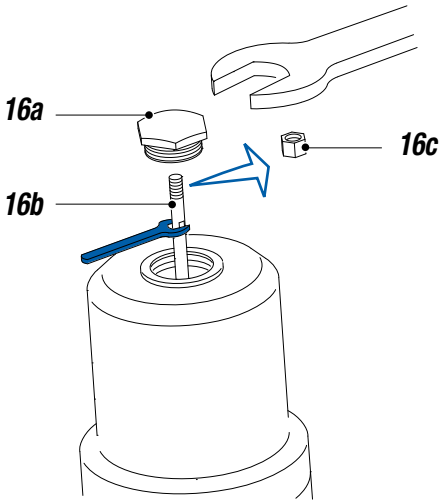
16

Necessary tools and equipment



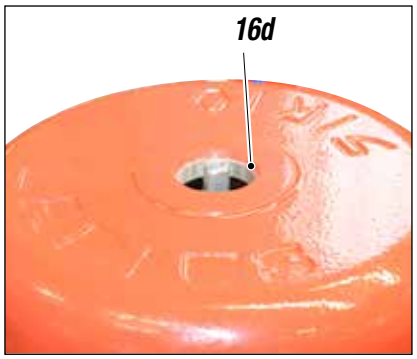


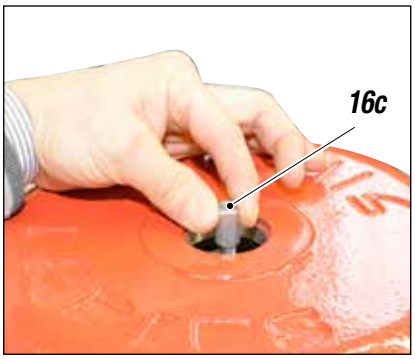
Procedure

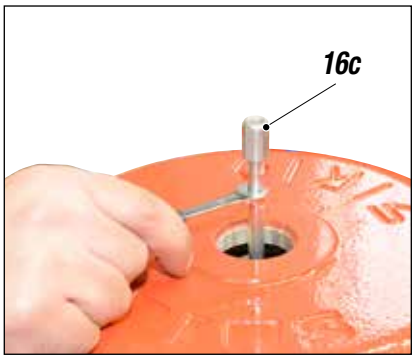
16.1 Raise the central guide rod (**16b**) from inside the cylinder (**16d**)

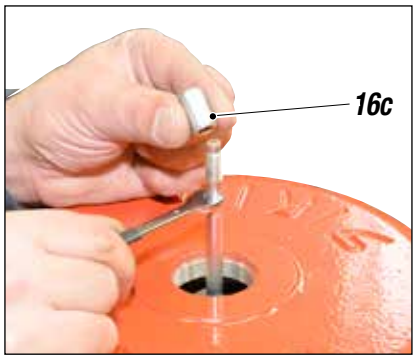
16.2 Remove the nut (**16c**)

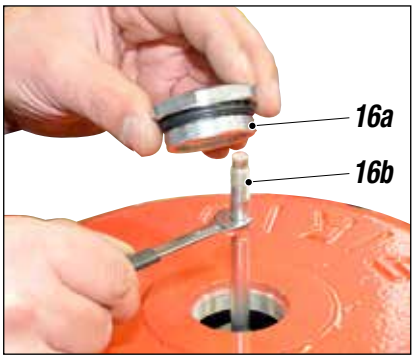
16.3 Re-screw the cap (**16a**) onto the rod using 2 wrenches and re-screw in the cap on the cover (**16e**)











Q PROBLEMS AND SOLUTIONS

Problem	Cause	Solution
The pump does not start	Feed air not sufficient;	Check on the air supply line. Increase the diameter of the feed hose;
	Outlet product line clogged;	Open the recirculation tap to check whether the pump starts up. Unscrew the high pressure filter and clean/ replace the filter sieve. Clean/replace the spray gun's filter;
	Clogged product intake line;	Clean the suction filter;
	Pneumatic motor blocked in the cycle reversal position;	Reduce feed air pressure;
	Parts failure of the pneumatic motor;	Disassemble the motor and verify;
Accelerate working and no pressure of the pump	There is no product;	Add the product;
	The pump sucks air;	Check the flexible suction tube;
	Gaskets of the pumping rod worn;	Replace the lower gaskets;
	Suction valve worn or partially clogged;	Disassemble the suction valve. Clean and/or replace, if possible, the parts worn;
	Suction filter clogged;	Clean/replace the suction filter's two disks;
	Suction filter too fine;	Remove the fine disk, leaving only the larger one inside;
The pump functions, but doesn't stop when the chamber is full (the pump continues slowly, increasing and/or decreasing)	Gaskets of the pumping rod worn;	Replace the lower seals
	Suction valve worn or partially clogged;	Disassemble the suction valve. Clean and/or replace, if possible, the parts worn;
	Delivery valve worn or partially obstructed;	Remove the delivery valve and clean/ replace any worn parts;
	Upper gaskets worn.	Tighten the packing nut.
The pressure of the material is significantly reduced when the trigger is pressed	The spray gun's nozzle is too large or worn	Replace it with a smaller one
	The spray gun's filter and the material output filter's sieve are too fine	Replace them with filters of a larger mesh size

Always close the compressed air supply and release the pressure in the plant before performing any check or replacement of parts of the pump.

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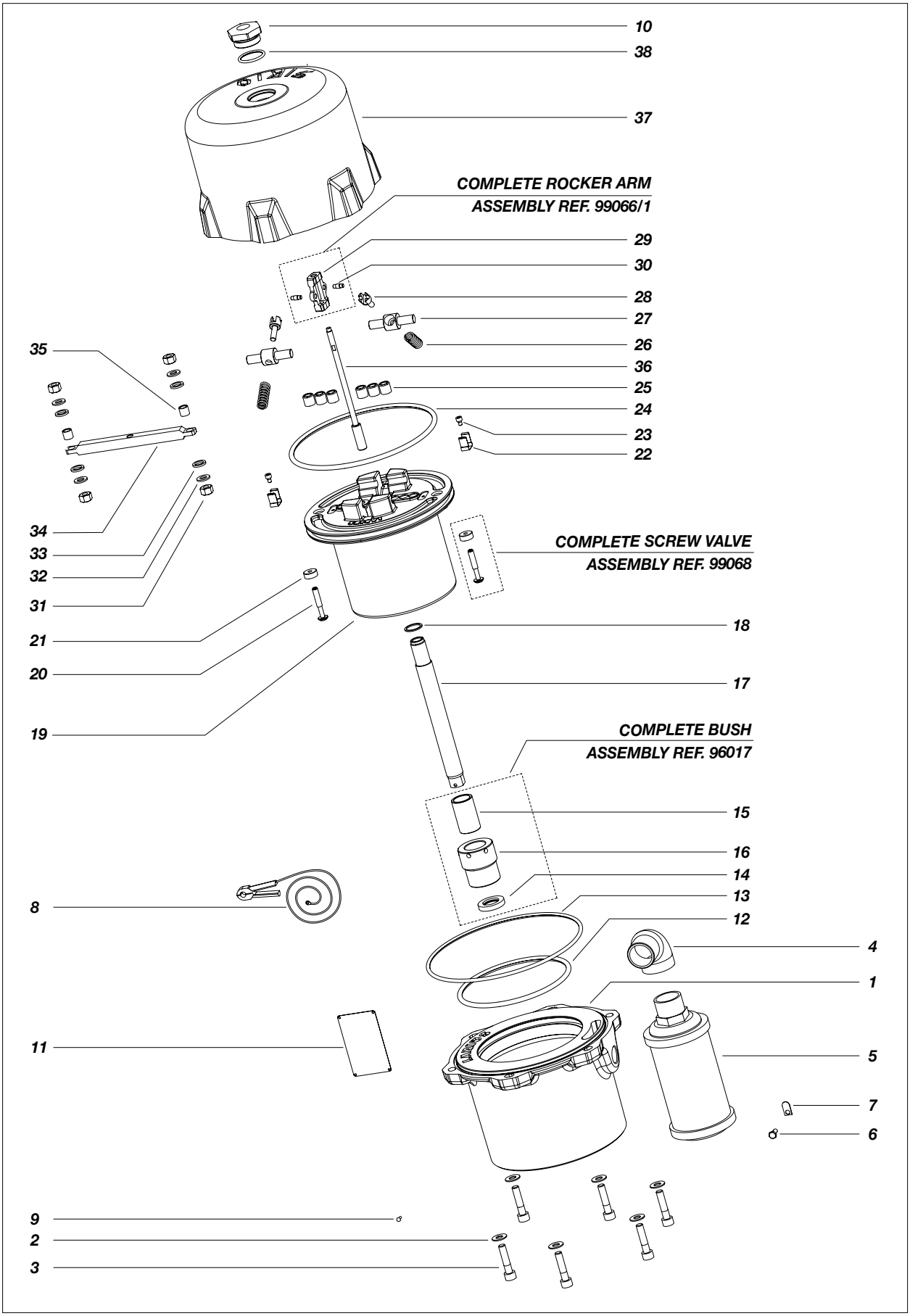
R COMPLETE PNEUMATIC MOTOR Ref. 99100

WARNING: always indicate code and quantity for each part required.



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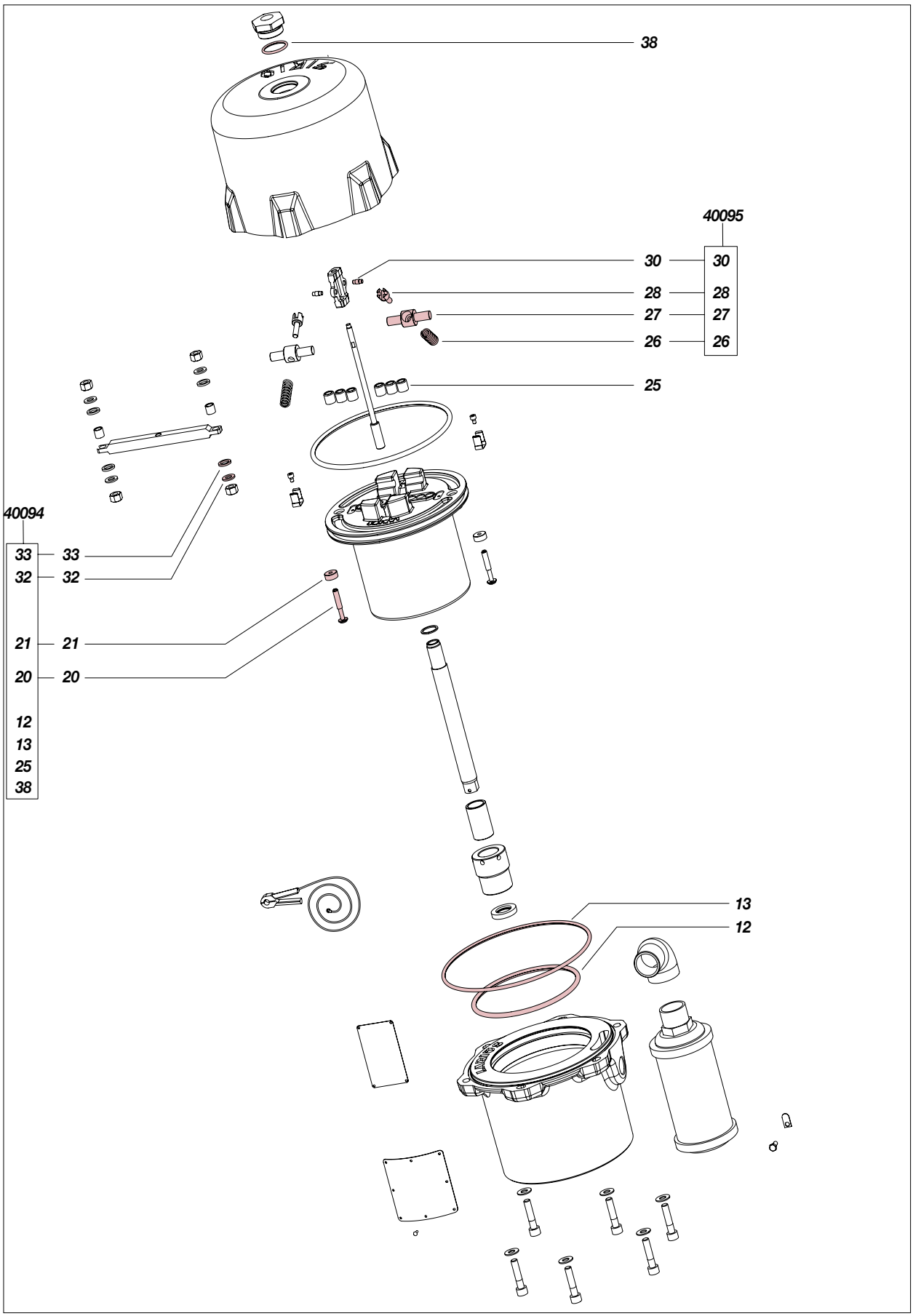
Pos.	Code	Description		Q.ty
	99100	**Complete motor**		-
1	99050	Motor base		1
2	33005	Washer Ø 10		6
3	16111	Screw		6
4	20172	Elbow Fitting		1
5	99054	Sound Absorbing Filter		1
6	96211	Screw Te		1
7	96210	Grounding Plate		1
8	5010	Grounding Cable		1
9	34021	Rivet Ø2.5x5		12
10	96001	Cap		1
11	99069	Shearing Plate		1
12	99056	O-ring 226		1
13	99055	O-ring 3925		1
14	Assembled 96017	96019	Seal Ring	1
15		96017/1	Brass Bearing	1
16		96017/2	Guide Bushing	1
17	96016	Piston rod		1
18	33031	Washer		1
19	99051	Piston		1

Pos.	Code	Description		Q.ty
20	Assembled 99068	99057	Valve Screw	2
21		99058	Valve Gasket	2
22	96011	Guide Spring		2
23	96025	Screw Tce		2
24	99059	O-ring 8850		1
25	96009	Seal Bushing		6
26	99061	Exchange Spring		2
27	99060	Roller		2
28	96007	Fork		2
29	Assembled 99066/1	96008/1	Rocker lever	1
30		96024	Fork pin	2
31	4108	Nut		4
32	32024	Washer Ø 8		4
33	96111	Gasket		4
34	99062	Crosspiece		1
35	96112	Guide Bushing		2
36	96010	Guide Rod		1
37	99053	Motor cylinder		1
38	95075	O-ring		1

S PNEUMATIC MOTOR KIT

WARNING: always indicate code and quantity for each part required.



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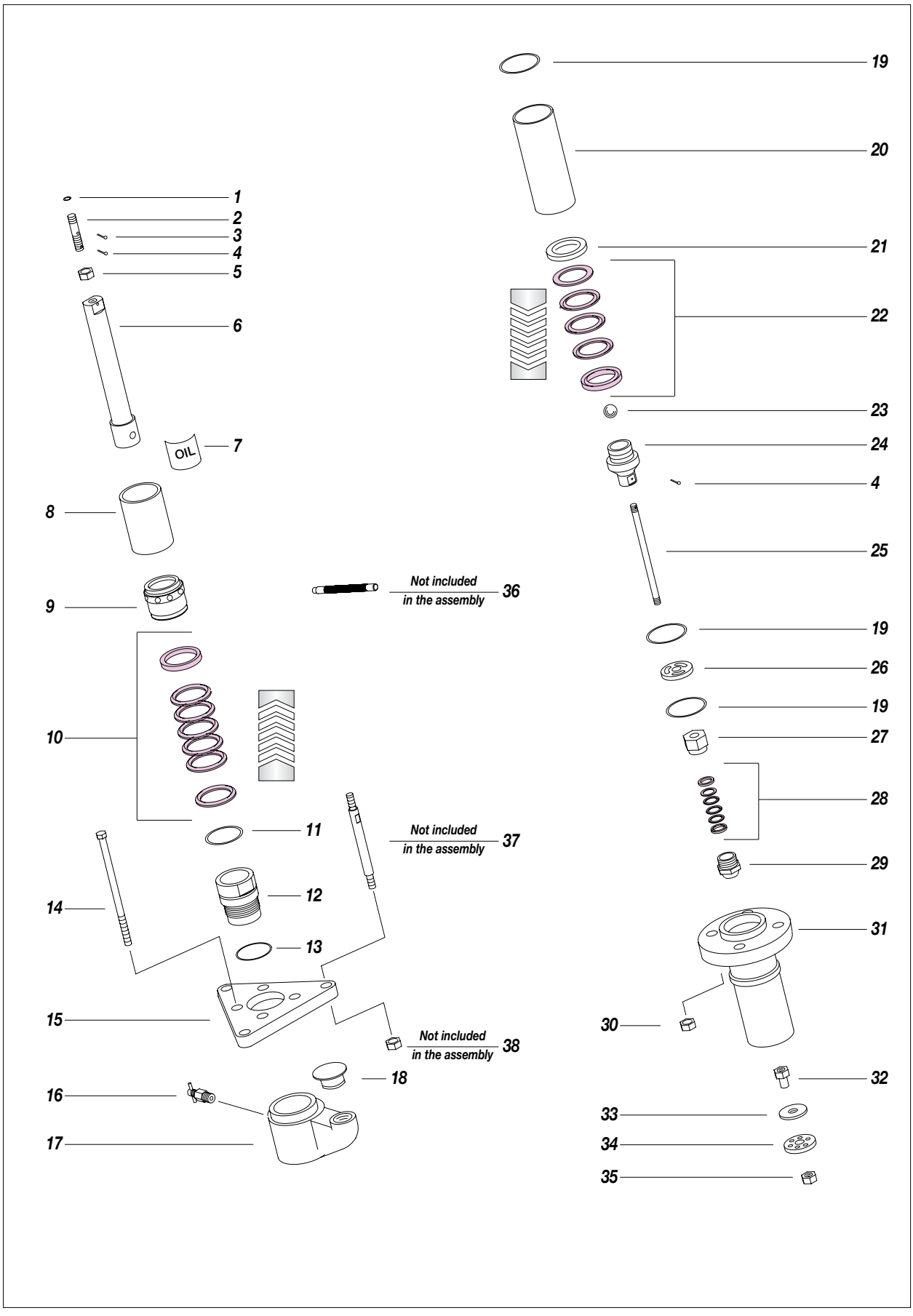
Kit Code	Position	Description
40094	12, 13, 2x(20), 2x(21), 6x(25), 4x(32), 4x(33), 38	SIRIO motor gasket kit

Kit Code	Position	Description
40095	2x(26), 2x(27), 2x(28), 2x(30)	SIRIO air motor valve repair kit

T EXPLODED VIEW FOR PUMPING GROUP

WARNING: Always indicate code and quantity for each part required.



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Short pumping assembly 99557 (not included in the assembly: #3 short motor rods Ref.99588)
Long pumping assembly 99558 (not included in the assembly: #3 long motor rods Ref.99589)

Pos.	Code	Description	Q.ty
1	96073	O-ring	1
2	99586	Short tie rod	1
	99587	Long tie rod	1
3	3323	Split pin	1
4	95015	Split pin	2
5	95007	Nut	1
6	96410	Piston rod	1
7	96233	Label “OIL”	1
8	95912	Oil cup	1
9	96413	Press gasket	1
10	96428	Upper gasket kit	1
11	95915	O-ring	5
12	96412	Fitting	1
13	95917	Gsket	1
14	95914	Tie rod	4
15	99585	Upper flange	1
16	95721	Bleeder valve	1
17	95919	Pumpong upper part	1
18	100	Plug	1
19	95925	Washer	3
20	95261	Material cylinder	1

Pos.	Code	Description	Q.ty
21	95264	Shovel plate	1
22	42679	Lower gasket kit	1
23	96094	Ball	1
24	96427	Fitting/Ball housing assembly	1
25	96417	Rod	1
26	96418	Valve lock	1
27	96419	Packing nut	1
28	96435	Shutter gasket pack	1
29	96426	Shutter assembly	1
30	95013	Nut	4
31	95909	Complete suction housing	1
32	96424	Bush	1
33	95938	Piston plate	1
34	96423	Injection plate	1
35	95158	Nut	1
NOT INCLUDED IN THE ASSEMBLY			
36	20144	Locking pin	1
37	99589	Long motor rod	3
	99588	Short motor rod	3
38	95127	Nut	3

U ATEX - DECLARATION OF CONFORMITY

LARIUS®
Transfer - Extrusion - Injection pumps - Paint spraying equipment
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CE

POMPA A PISTONE PER TRAVASO *TRANSFER PNEUMATIC PISTON PUMP*

SIRIO

Ex

II 2 G Ex h IIB T6 Gb

$T_{amb.}$: -20°C ÷ +60°C $T_{max.fluido}$: 60°C

no. 1775/5/2016 -- T.I. n° 1354

TECHNICKÁ INŠPEKCIA, a.s.
SLOVENSKÁ REPUBLIKA
CEOC INTERNATIONAL

ACKNOWLEDGEMENT OF RECEIPT

no. 1775/5/2016

Technická inšpekcia, a. s.,
Trnavská cesta 56, 821 01 Bratislava
Notified body: 1354,

confirms, that Technical File Documentation
prepared by

Larius s.r.l.
Via Antonio Stoppani, 21
23801 CALOLZIOCORTE (LC) - ITALY

has been received and stored according to the Article 13.1(b) (ii) of Directive 2014/34/EU on equipment and protective systems intended for use in potentially explosive atmospheres

Scope of Ex Equipment:
HIGH PRESSURE PAINT SPRAYING AUTOMATIC AND MANUAL GUNS WITH AIR-LESS TECHNOLOGY Series: AUTOMATIC PAINT SPRAY GUNS LA95 and MAUNUAL PAINT SPRAYING GUNS AT250-AT300 - L91X
PAINT SPRAYING AUTOMATIC AND MANUAL GUNS WITH MIST-LESS TECHNOLOGY Series: AUTOMATIC PAINT SPRAY GUNS L200 and MAUNUAL PAINT SRAYING GUNS L400
LOW PRESSURE AUTOMATIC PAINT SPRAYING GUNS Series: L100 - MA98
PAINT SPRAYING PNEUMATIC PUMP Series: SIRIO
Marking: Ex II 2 G Ex h IIB T6 Gb

Technical File Documentation according to the Annex VIII Article 2 of Directive 2014/34/EU

Doc. no.	Issue
Fascicolo tecnico Secondo la direttiva 2014/34/EU	Data 24/11/2016 Rev. 0

Technical documentation will be stored for 10 years until December 12th, 2026.

Bratislava, December 12th, 2016

On behalf of Technická inšpekcia, a.s.
Ing. Dušan Perniš
General Director

NB 1354

301087
PDOKA2-413

CE DECLARATION OF CONFORMITY

The manufacturer

LARIUS srl
Via Antonio Stoppani 21 - 23801 Calolziocorte (LC) ITALY
Tel: +39 0341 621152
Fax: +39 0341 621243

E-mail: larius@larius.com

Declares under his owns resonsibility that the product:

SIRIO 33:1 EXT

complies with directives:	**- EC Directive 2006/42 Machinery Directive**
furthermore to the harmonized standards:	**- UNI EN ISO 12100-1/-2** **Machinery safety, basic concepts, general principles of design. Basic terminology, methodology. Technical principles.**

This declaration relates exclusevely to the product in the state in which it was placed on the market, and excludes components or modifications which are added or carried out subsequently by end user.

Signature

Calolziocorte, 11 September 2023
Place / Date

Pierangelo Castagna
Managing Director

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